

COMPUTER INFORMATION SYSTEMS-GAMING (CISG)

CISG 100 F Introduction to Computer Game Design 3 Units

54 hours lecture per term. This is an introductory survey class in computer game design. Students will learn the basics of how computer games are designed and created. This includes an overview of computer game graphics, computer game programming, game level design, game music development, computer game strategy and playability, and the entire computer game development process as well as the current gaming business. (Degree Credit) (CSU)

CISG 101 F Advanced Computer Game Design 3 Units

Advisory: CISG 100 F.

54 hours lecture per term. This course teaches students advanced topics in game design. Students learn how to implement a game design process, how to design for narrative, characters and puzzles. Students will also learn how to design games for a variety of game environments including multiplayer games, virtual reality games and multiplayer games. This course is a continuation of topics in CISG 100 F. (Degree Credit) (CSU)

CISG 103 F History of Video Games 3 Units

54 hours lecture per term. This course is a comparative introduction to the nature and history of video games as cultural artifacts, from Pong to online role-playing. Students explore the evolution of video games, including their technological and artistic antecedents, with an analysis of how video games reflect the beliefs, aspirations, and values of the cultures where they flourish. This course includes gameplay experience and analysis of notable game genres, identifying significant artistic and technological innovations. (Degree Credit) (CSU) AA GE

CISG 105 F Intro Augmented Virt Reality 3 Units

Pass/No Pass or Letter Grade option. 54 hours lecture per term. This course is designed for students who are new to augmented and virtual reality (AVR). No previous knowledge of programming or AVR experience is required. By the end of the course, the student will have learned the history of AVR and developed and deployed an AVR application. The student will understand the physical principles involved in creating a user-friendly environment. The student will be knowledgeable of the current state of these technologies and of their many uses in various fields. (CSU)

CISG 110 F Introduction to Programming for Computer Games 3 Units

Advisory: Basic knowledge of a procedural or object-oriented programming language

This is an introductory survey course on computer game programming. Students will learn the basic game programming design process, the use and creation of game programming tools, basic game data structures, programming artificial intelligence, graphics programming, online and multi-user game design, 3-D engine design, and how game programmers interact with game designers. (Degree Credit) (CSU)

CISG 112 F Foundations of Game Engine Programming 3 Units

Advisory: Basic knowledge of a procedural or object-oriented programming language.

54 hours lecture per term. This is an introductory survey course on computer game engines. Students will learn the basic features of game engines, specific features of different kinds of game engines, and how to use game engines to create computer games. (Degree Credit) (CSU)

CISG 150 F Apple SWIFT Programming 1 Explorations 3 Units

54 hours lecture per term. This course provides an immersive journey into the world of Swift, Apple's robust and intuitive programming language for iOS, macOS, watchOS, and beyond. This course meticulously covers the foundational principles of Swift, blending theory and practice. As students traverse the modules, they'll gain a profound understanding of Swift's syntax, design paradigms, and the limitless potential it offers in Apple's ecosystem. By the end of the course, participants will be adept at crafting efficient Swift applications and will be poised to delve deeper into specialized domains of Apple development. (Degree Credit) (CSU)

CISG 151 F Apple SWIFT Programming 2 Fundamentals 3 Units

54 hours lecture per term. This course helps students build fundamental iOS app development skills with Swift. Master the core concepts and practices that Swift programmers use daily and build a basic fluency in Xcode source and UI editors. Students will be able to create iOS apps that adhere to standard practices, including the use of stock UI elements, layout techniques, and common navigation interfaces. (Degree Credit) (CSU)

CISG 152 F Apple SWIFT Programming 3 Data Collections 3 Units

54 hours lecture per term. This course gives students the opportunity to expand on the knowledge and skills they developed in Swift Fundamentals by extending their work in iOS app development, creating more complex and capable apps. They'll work with data from a server and explore new iOS APIs that allow for much richer app experiences—including displaying large collections of data in multiple formats. Three guided app projects help students build an app in Xcode from the ground up with step-by-step instructions. Xcode playgrounds help students learn key programming concepts in an interactive coding environment that lets them experiment with code and see the results immediately. Students will explore app design by brainstorming, planning, prototyping, and evaluating an app idea of their own. (Degree Credit) (CSU)

CISG 160 F C# for Game Programming 3 Units

Advisory: Basic knowledge of C# programming language 54 hours lecture per term.

This course teaches use of the C# programming language to create computer games. Students will review the C# programming language, learn how C# uses .NET resources, and learn how to use DirectX. Topics also include using 3-D, sound, and animation. (Degree Credit) (CSU)

CISG 165 F C++ for Game Programming 3 Units

Advisory: Knowledge of basic C++ programming

This course teaches students how to use C++ to write computer games. Topics include a review of basic C++, how to use various data structures in C++, how to access hardware devices, how to use various graphics libraries, and how to use basic networking resources in C++. Students will learn how to create basic graphics and text-based games in C++. (Degree Credit) (CSU)

CISG 170 F Java for Game Programming 3 Units

Advisory: Basic knowledge of Java programming language.

54 hours lecture and 18 hours lab per term. This course teaches students how to use Java to write computer games. Topics include a review of basic Java, how to use various data structures in Java, how to access hardware devices, how to use various graphics libraries, and how to use basic networking resources in Java. Students will learn how to create basic graphics and text-based games in JAVA. (Degree Credit) (CSU)

CISG 175 F Multimedia Game Programming 3 Units

Advisory: Knowledge of Flash

This course teaches students how to use various multimedia tools to create games. Topics include a review of basic multimedia and virtual reality concepts, basic multimedia and VR APIs, and writing programs that use these APIs. (CSU) (Degree Credit)

CISG 182 F DirectX Graphics Programming

3 Units

Advisory: Basic knowledge of C++ and .NET

NET 54 hours lecture per term. This course introduces students to DirectX graphics programming tools using C++. Students learn the basics of DirectX, the general structure of the graphic libraries, and how to use DirectX to create 2-D and 3-D graphics, transform graphics, manage sound, and how it is used to create computer games. (CSU) (Degree Credit)

CISG 185 F Artificial Intelligence in Game Programming

3 Units

Advisory: General knowledge of the C++ or Java programming language.

This course introduces the use of Artificial Intelligence techniques in game programming. Students learn the foundation of computer Artificial Intelligence techniques, and how such techniques are implemented in computer code and how they are used in different kinds of computer games. (Degree Credit) (CSU)

CISG 190 F Programming Multiuser Online Games

3 Units

Advisory: Basic knowledge of a modern object-oriented programming language and general network concepts

54 hours lecture per term. This class is an introduction to programming online multi-player games. Students learn basic networking technology, network programming, and are introduced to the operation of network servers. Students also learn how to write code to link client computer games with network game servers and how to create server side game scripts. (Degree Credit) (CSU)

CISG 191 F eSports I Beginning

1 Unit

54 hours lab per term. This course introduces students to the world of electronic sports (eSports). Participants will engage in various eSports games, enhancing their skills in various online competitive activities. The curriculum focuses on building foundational gaming techniques and strategic thinking required for success in digital sports arenas. (Degree Credit) (CSU)